Works in Progress

"Trends going the wrong way can be reversed. In Oakland, we're taking the Lake Merritt channel and returning it to a tidal slough. We've dammed and culverted most of our creeks, yet Measure DD set aside $198 million that will do lots of good for water quality and restoration. Measure DD passed by 80 percent of the vote—it was a mandate for restoration.

Many of the 6.4 billion of us on Earth live in urban areas, which can exacerbate environmental problems but also provide solutions. The biosphere we live in is a thin, fragile layer—only as thick as a coat of paint on a football. We're starting to see the body of Mother Earth get spastic—droughts, tornadoes, heat waves like we've never seen before. David Brower talked about the 'great ecological U-turn.' When you're standing on the edge of a cliff about to fall off, the solution is not very complex. You turn around and take a very different direction. Recently, ten cities across the country were named as the top ten green cities—San Francisco, Berkeley, and Oakland were all on the list. But we're at best light green. We can work toward medium and deep green. In Oakland, the mayor's office is committed to making environmental changes, bold changes, paradigm changes. We need to reduce greenhouse gas emissions. In Oakland, we've set a goal of getting to 15 percent below 1990 levels by 2010. We want to reduce landfill waste by 20 percent by 2010. We can help over-consuming people get down to a sustainable level. If we can reduce waste, we can reduce energy use as well. I'd like to see each generation leave less of an ecological footprint. We can shift from basic levels of change to paradigm shifts. We can set the tone for the United States."

— Randy Hayes, City of Oakland, founder RainForest Action Network

Photo courtesy of David Hart and John Sanger

Stewardship: Volunteers in Urban Restoration

MARILYN LATTA
SAVE SAN FRANCISCO BAY

Restoring habitat in highly urbanized regions with dense populations and layers of infrastructure poses special challenges. But urban areas also present opportunities and resources that can be applied to advance habitat restoration projects. Even highly altered and degraded urban landscapes hold habitat creation and enhancement possibilities, and densely populated urban areas hold another great resource: thousands of potential volunteers. Finding and mobilizing these "hidden" urban resources can be the essential ingredient for a successful habitat restoration project.

Urbanized estuaries can offer numerous and varied potential partnerships with federal, state, regional and local landowners, agencies, businesses, and organizations. Even small projects can create large interest and present opportunities to combine talents and resources, or to match funds among diverse partners.

The greatest urban resource of all is people. Find ways to utilize volunteers in a restoration project and they will participate. The key is developing a sustainable program of volunteer outreach and coordination with the restoration project. Here are some examples of the different types of habitat restoration projects we do in the San Francisco Bay-Delta Estuary:

1. Wetlands Enhancement Site Partnerships: Save The Bay partners with local, state, and federal resource agencies at six sites in San Francisco Bay to involve 5,000 community volunteers each year in wetlands restoration projects. These projects involve local schools, community and religious groups, corporations, and Bay Area residents in Bay education and on-the-ground habitat restoration of tidal wetlands.

Source: Save The Bay

2. Implementing Revegetation Plans with Community Volunteers: Many agencies do not have the staff time or funding to do such time-intensive tasks as manual removal of invasives, site-specific seed collection, and site monitoring. By implementing sound plans that educate people while they participate, both people and habitat benefit.

3. Regional Native Plant Nursery Program: We enhance educational values for our volunteers and save money on plants by growing them ourselves. We engage volunteers in site- and watershed-specific seed collection, plant propagation and transplanting, and planting more than 20,000 wetland plants each year in native watersheds.

4. Islands and other unique and sensitive sites: Save The Bay partners with the U.S. Fish and Wildlife Service at the Marin Islands and Bair Island to engage volunteers in habitat restoration via canoe and kayak.

5. Subtidal Restoration and Monitoring Projects: Save The Bay is partnering with the NOAA Community-based Restoration Program and San Francisco State University to monitor the status of oyster and eelgrass habitats in the Bay and small pilot restoration projects that are generating needed information for large-scale regional efforts.

6. Non-Traditional Partners: We also partner with groups not traditionally included in the environmental movement—businesses, industry, hunting associations, military reserves, and others. In order to truly save the Bay, we need everyone to participate in the effort and become part of the solution.

These examples all highlight diverse partnerships among state and federal public resource agencies, private businesses, community foundations, civic groups, non-profits, and local schools. They offer a wide variety of ideas and models for anyone pursuing urban estuarine habitat restoration.

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Volunteers Restore Marshes and Uplands

MICHAEL LEE
GOLDEN GATE
NATIONAL PARKS CONSERVANCY

Since its inception in 1981 as a Congressionally designated cooperative association, the Golden Gate National Parks Conservancy has provided the Golden Gate National Parks with nearly $78 million in aid to improve park sites, provide services and education programs for visitors and local communities, engage diverse audiences in the parks, and encourage those who use and value these parklands to take a role in their preservation. The Golden Gate National Parks Conservancy is a nonprofit membership organization created to preserve the Golden Gate National Parks, enhance the experiences of park visitors, and build a community dedicated to conserving the parks for the future.

The Parks Conservancy recruits and manages volunteers for conservation stewardship projects park-wide. In 2004 alone, nearly 16,000 individuals provided 382,000 hours of service in support of park programs — the equivalent of 184 full-time employees.

Volunteers perform a variety of tasks, ranging from restoring habitat (site stewardship) and trails, monitoring and banding birds of prey (Golden Gate Raptor Observatory), growing native plants (Native Plant Nurseries), leading interpretive walks and talks, and doing administrative work.

Nearly 3,000 volunteers were involved with the Parks Conservancy's most ambitious and visible project to restore Crissy Field into a premier urban National Park site. Under the supervision of Park staff volunteers planted almost 100,000 native plants at Crissy Marsh.

"They get a first hand experience with the resource. For many of them it's the first time. It's a way for them to connect both personally and intellectually."

Mike Lee

Taken as a unit, Golden Gate is one of the largest urban national parks in the world. Established in 1972, as part of a trend to make national park resources more accessible to urban populations and bring "parks to the people," Golden Gate's 75,398 acres of land and water extend north of the Golden Gate Bridge to Tomales Bay in Marin County and south to San Mateo County, encompassing 59 miles of bay and ocean shoreline and distinctive coastal habitats. These lands represent one of the nation's largest coastal preserves and attract 17 million visitors each year, making Golden Gate one of the most visited National Parks in the nation.

It is the dedication and hard work of volunteers that create the visible and lasting impacts benefiting the cultural and natural resources of the Golden Gate National Parks, today and into the future. Proper orientation, training, and skillful, personal supervision; investing in the continuing education of volunteers; and genuinely recognizing volunteers for their contributions are key ingredients to successfully recruiting, managing, and retaining volunteers.

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VOLUNTEERS = $

The Stevens and Permanente Creeks Watershed Council has at least 80 full-time volunteers engaged in watershed stewardship, including monitoring water quality. In 2005, 1,460 volunteers helped clean up 46 miles of creeks in Santa Clara County, removing 40,000 pounds of trash.

"Funding for volunteers to stay involved—and to attend stakeholder meetings—is a challenge. The collaborative process tends to be dominated by the agencies. There should be a mechanism for the general public to participate."

Mondy Lariz
Stevens and Permanente Creeks Watershed Council

According to the U.S. Fish & Wildlife's Mendel Stewart, volunteers at the S.F. Bay National Wildlife Refuge complex represent 19 full-time staff people, at a dollar value of $470,000. At the South Bay salt ponds, 15 active docents regularly take the public on guided walking tours. Volunteers also take resource managers by boat to the Farallones. Citizens to Complete the Refuge continue the volunteer and advocacy work they started 40 years ago.

"Citizens like these define what volunteerism is all about."

Mendel Stewart
U.S. Fish & Wildlife Service

North Bay Restoration: Napa Salt Ponds and Hamilton Airfield

AMY HUTZEL AND TOM GANDESBERY
CALIFORNIA COASTAL CONSERVANCY

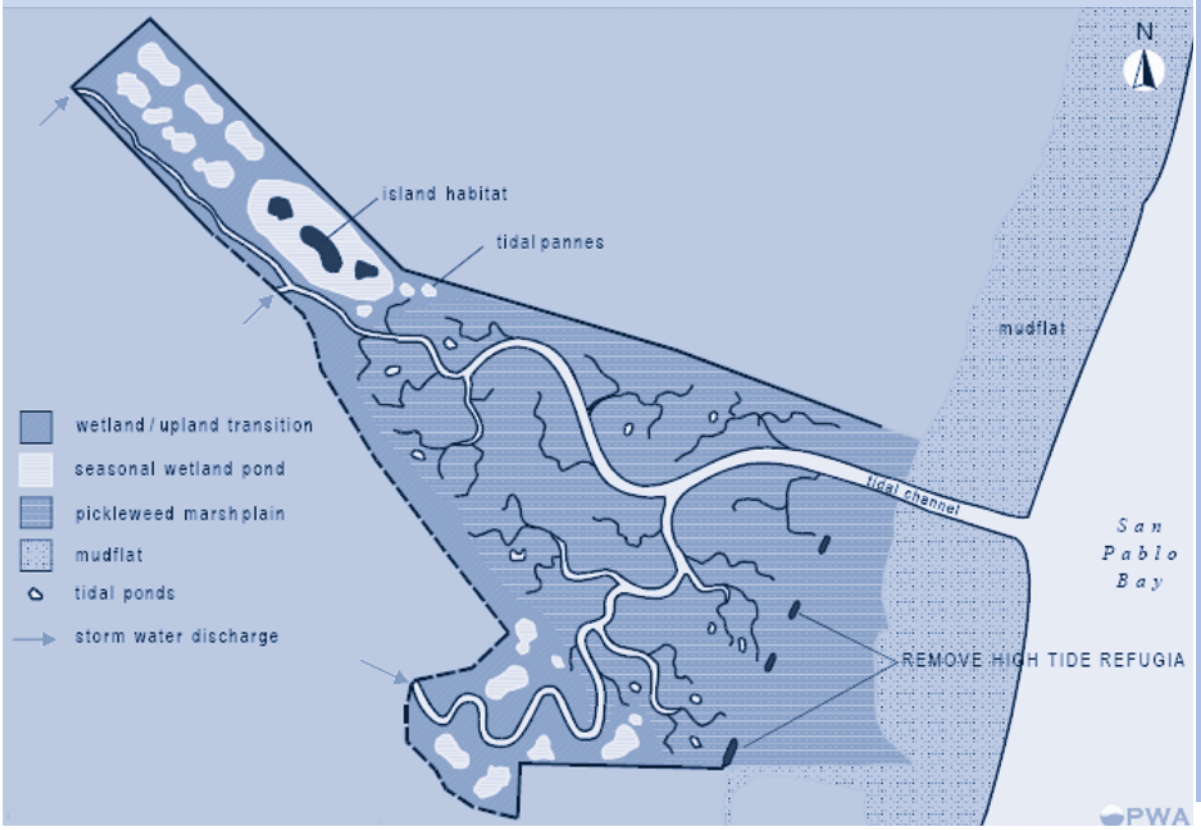
Before the Gold Rush, over 50,000 acres of tidal marsh ringed the Bay. Today, less than 20,000 acres exist, but we have the potential to almost double that amount. Two such large-scale restoration opportunities are coming to fruition in the North Bay: the Napa Salt Ponds and Hamilton Airfield. The two projects have similar objectives but involve very different sites and different designs. At both projects, we want to restore tidal and non-tidal habitats.

In 1994, the Cargill Salt Company ceased the production of salt in the North Bay and sold almost 10,000 acres of ponds and adjoining lands to the State of California for $10 million. The Coastal Conservancy, California Department of Fish and Game, and U.S. Army Corps of Engineers have completed a Feasibility Study for the reduction of salinity and restoration or enhancement of habitats in the former salt ponds. Some of the inactive salt ponds currently provide significant habitat for fish and wildlife, while the salinity levels in others exceed that which is beneficial to wildlife. The project objectives for the Napa Salt Ponds are: (1) to restore large patches of tidal habitats in a band along the Napa River, in a phased approach, to support a wide variety of fish, wildlife, and plants, including special status species, and (2) to effectively manage water depths and salinity levels of remaining ponds to benefit migratory and resident shorebirds and waterfowl. Restoration began in Fall 2005 with the commencement of tidal restoration of 3 ponds (3,000 acres) and enhancement of 3 additional ponds. The work is being conducted by Ducks Unlimited using grant funds from the Wildlife Conservation Board and the California Bay Delta Authority. A potential addition to the Project is the use of recycled water to dilute

POTENTIAL FOR LARGE-SCALE RESTORATION

	ACRES
Napa Salt Ponds	9,850
Hamilton & SLC	990
Bel Marin Keys	1,585
Napa Plant Site	1,400
Skaggs Island	3,300
Sears Point	1,400
Cullinan Ranch	1,564
TOTAL	20,000

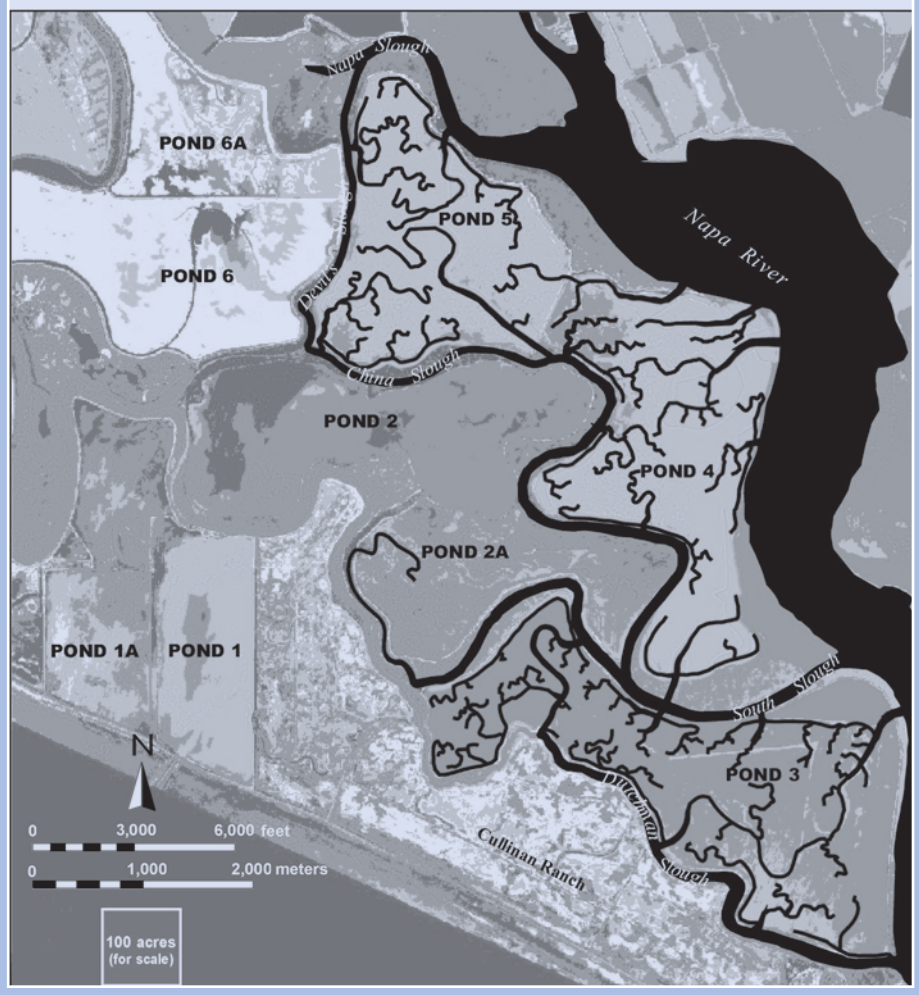
PREDICTED HABITAT AT YEAR 50, HAMILTON AIRFIELD



TAKE HOME POINTS

- **The Napa Salt Ponds and Hamilton Airfield projects both include a mix of tidal and non-tidal wetlands.**
- **Both sites are worthy of restoration but require different treatments.**
- **Other North Bay projects (from Pond 2A to Sonoma Baylands) have provided lessons.**
- **We are using two different designs to achieve vegetated tidal marsh and other tidal habitats in a reasonable time frame.**
- **The designs are based on site conditions such as elevation, existence of a historical template, proximity to development, and existing non-tidal wetlands.**
- **Design complexity and costs increase with constraints such as subsidence, proximity to development, lack of historical template, flood control issues, existing non-tidal wetland resources, etc.**

PREDICTED LONG TERM HABITAT AT THE NAPA SALT PONDS



bittern, a salt production by-product, in partnership with the Sonoma County Water Agency.

The first phase of the Hamilton Wetland Restoration Project will provide 620 acres of restored tidal and seasonal wetlands at a former Army airfield and adjacent taxi areas on San Francisco Bay in the city of Novato, Marin County, California. The Corps of Engineers and State Coastal Conservancy are planning to add the adjoining State Lands Commission parcel and the Bel Marin Keys V property to the project to expand the wetlands project size to almost 2,500 acres. The phased approach will be used to complete the design and construction tasks in conjunction with the availability of land and dredged material. This wetland restoration project will advance the beneficial reuse of dredged material from San Francisco Bay as part of the Long Term Management Strategy (LTMS). The U.S. Army Corps of Engineers, San Francisco District, is the lead federal agency for the project and the California State Coastal Conservancy is the local sponsor.

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South Bay Restoration

CARL WILCOX
CALIFORNIA DEPARTMENT
OF FISH AND GAME

Over the last several years, significant progress has been made toward preservation and restoration of tidal wetlands in the South Bay. With the Cargill Salt Ponds acquisition, 17,700 acres of diked former Baylands are in the planning process for restoration. These projects include the Eden Landing Restoration Project, Bair Island, and the South Bay Salt Ponds. These projects build on restoration efforts over the past 30 years that have resulted in substantial tidal wetland restoration in the South Bay.

The Baylands Ecosystem Habitat Goals Report recommended the restoration of between 16,000 and 21,000 acres of tidal marsh habitat in the South Bay and the management of 10,000 to 15,000 acres of salt pond habitat. With the current projects, the objectives for tidal marsh restoration may be achieved within the foreseeable future.

The Eden Landing Restoration Project is currently under construction and is scheduled to be completed in the summer of 2006. This project will restore 650 acres of former crystallizers and salt ponds to tidal marsh while enhancing an additional 200 acres of managed ponds. One element of the project will be the restoration of approximately four miles of large tidal channels.

The Bair Island Restoration Project is in the final stages of planning and permitting. This project will restore approximately 1,700 acres of diked Baylands to tidal influence. The timing of restoration is being coordinated with nonnative Spartina control efforts to minimize the potential for colonization once restoration is implemented. The project will use dredge material to accelerate tidal marsh development to minimize potential bird strike concerns associated with the nearby San Carlos Airport. Tidal barriers will also be installed in two major sloughs to address potential sedimentation concerns at the Port of Redwood City.

The South Bay Salt Ponds Restoration Project is developing the restoration plan for the 15,100 acres of salt ponds acquired from Cargill Salt in 2003. This planning effort will be completed and a first phase restoration project implemented in 2008. In the interim, the Department of Fish and Game and U. S. Fish and Wildlife Service are managing the ponds under an Initial Stewardship Plan. Implementation of this plan has resulted in substantial increases in wildlife use but also highlights the complexity of managing large ponds while complying with water quality objectives.

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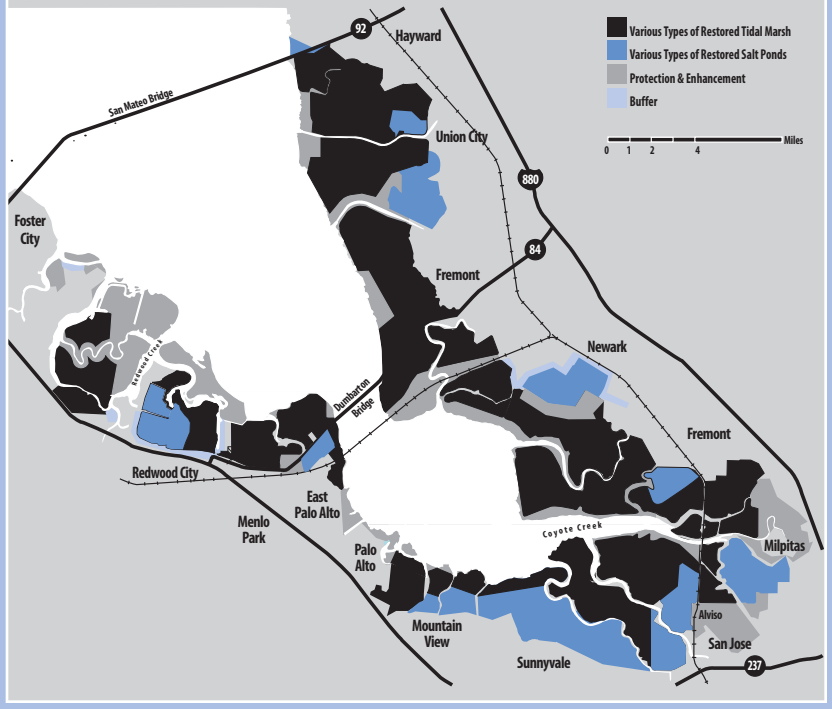
PRELIMINARY RESTORATION RECOMMENDATIONS



TAKE HOME POINTS

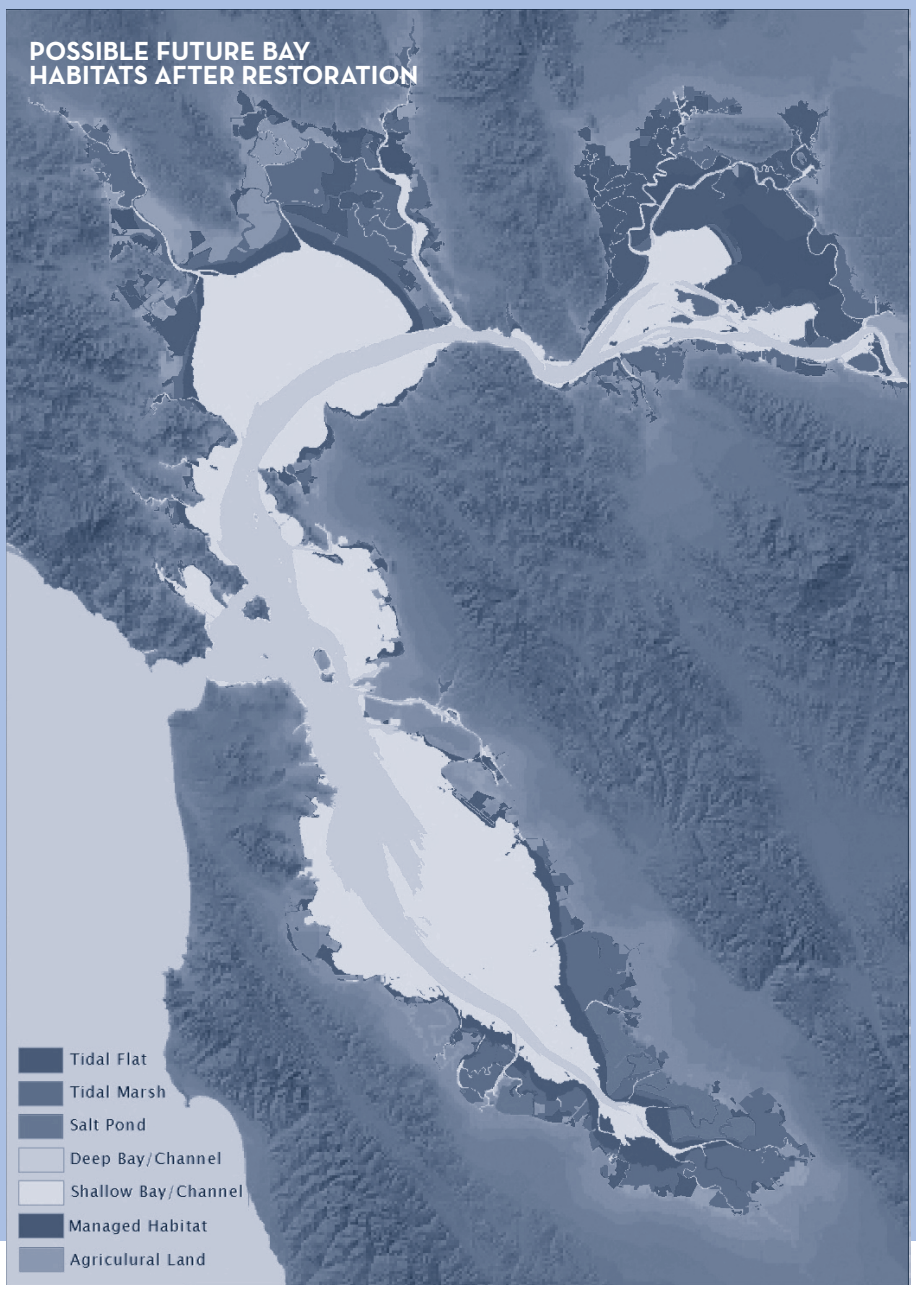
- **Tidal restoration will be advancing at a rapid rate in the next three years, with approximately 2,500 acres restored at Eden Landing, Bair Island, and the Island Ponds.**
- **Planning is well underway for first phase implementation of the South Bay Salt Pond Restoration Project in 2008.**
- **Managing pond habitat is an art that is developing as to how to optimize values for individual species and species groups while maintaining pond health and staying within permit conditions for discharges to the Bay.**
- **We need to perform additional investigation into mercury issues associated with South Bay pond restoration.**

Evaluating Restoration Success: The Human Angle

STEVE RITCHIE
SOUTH BAY SALT POND RESTORATION PROJECT

Most of the attention on habitat restoration projects is focused on the success or failure in producing the desired biological and physical results: achieving target populations of birds, fish, plants, etc. CALFED and others have long recognized that humans are a part of the ecosystem that must be considered as part of any restoration project, but in most projects, the human angle is not well-defined or considered.

In the South Bay Salt Pond Restoration Project, successful restoration must fully integrate the human element for a number of reasons. The most obvious reason is that the former salt ponds are literally surrounded by more than two million people. Restoration of the 15,100 acres of ponds now owned by the state and federal governments must be carried out in a way that enhances the quality of life for residents of the South Bay area. This is particularly critical at a time when large-scale public funding is hard to come by.



TAKE HOME POINTS

- **We need to monitor changes in community values and interests, just like we monitor species' use of habitat.**
- **We need to make sure restoration works for humans as well as animals, to be sensitive to human concerns from the outset, and to work actively to understand and address those concerns.**
- **We need to use every opportunity to educate folks about the values of restoration and to cultivate community ownership.**

Through its Stakeholder Forum and other processes the Project is working to identify what the broader community desires as a result of the restoration. Those broader public desires need to be considered within the constraints of federal ownership (the Don Edwards San Francisco Bay National Wildlife Refuge) and state ownership (the Eden Landing State Ecological Preserve).

Equally important with the result is the process by which the restoration plan is developed. Transparency of decision-making is key to building public trust and support for the Project. This is true both in restoration planning and in long-term adaptive management. The Restoration Project is working hard to ensure that it earns that trust and support.

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Successes in Protecting and Restoring the Bay

BETH HUNING AND SANDY SCOGGIN
SAN FRANCISCO BAY JOINT VENTURE

The San Francisco Bay Joint Venture (SFBJV) is a partnership of non-governmental organizations, utilities, landowners, and agencies working to acquire, restore, and enhance wetlands on San Francisco Bay and the coasts of San Mateo, Marin, and Sonoma Counties. The San Francisco Bay Joint Venture is one of the 12 wetland habitat Joint Ventures operating under the North American Waterfowl Management Plan (NAWMP), a Congressional agreement between the United States, Canada, and Mexico. The SFBJV Implementation Strategy, Restoring the Estuary, was completed and approved by NAWMP in 2001.

Based on the Habitat Goals Project, SFBJV goals include:

- Acquisition: 63,000 acres of Bay habitats, 37,000 acres of seasonal wetlands, and 7,000 acres of creeks and lakes (107,000 acres total);
- Restoration: 37,000 acres of Bay habitats, 7,000 acres of seasonal wetlands, and 22,000 acres of creeks and lakes (49,000 acres total);
- Enhancement: 35,000 acres of Bay habitats, 23,000 acres of seasonal wetlands, and 22,000 acres of creeks and lakes (80,000 acres total).

The focus of SFBJV for the past four years has been implementation of projects toward the established goals. Analysis of accomplishments since the founding of SFBJV indicate significant progress toward the established acreage goals for acquisition; protection of 43,000 acres (40 percent of the total goal and 63 percent for tidal wetlands); restoration of 5,023 acres (10 percent of total goal); and enhancement of 4,982 acres (6 percent of total goal). These accomplishments are being analyzed to correspond with each habitat type to help assess future focus and priorities of SFBJV and locations in focal areas of San Pablo Bay, the South Bay, Central Bay, and the coast.

Based upon the above information, the SFBJV Restoration Strategy/Technical Committee has recommended a shift in focus toward restoration. This emphasis would include funding, planning for restoration, and monitoring and assessment to guide decisions about the habitat types needed to accomplish the vision and goals established in *Restoring the Estuary*. A new project tracking data system has been developed by Ducks Unlimited for SFBJV to provide partners with the ability to track the progress of each project and to analyze each project and accomplishment in the context of the overall goals. The NAWMP assessment has also identified additional monitoring and evaluation needs to better understand (a) whether wintering conditions in San Francisco Bay contribute to the continental scaup and scoter declines; (b) the overall quality of Bay habitat for wildlife; (c) the impacts of human disturbance on waterfowl and other wildlife species; (d) the impacts on wildlife of converting one type of habitat to another type of habitat; and (e) the relationships of migratory wildlife that use SFBJV habitats to the habitats within other joint ventures.

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SFBJV ACREAGE GOALS AND ACCOMPLISHMENTS OCTOBER 2005